

AGA=6B

**(use as many sheets as necessary)**

Sheet 2

**2**

Q

2

**Complete if Known**

Application Number

Filing Date

**September 26, 2003**

**First Named Inventor**

### Group Art Unit

1623

Examiner Name \_\_\_\_\_

Attorney Docket Number

$$AGA=6B$$
[illegible]

**Examiner  
Signature**

L. E. Crane

Date  
Considered

03/07/2006

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 3

**Complete if Known**

Application Number	10/670,525
Filing Date	9-26-2003
First Named Inventor	Hajime AGA et al
Group Art Unit	2833 --- 1623
Examiner Name	
Attorney Docket Number	GA-68

**U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
<i>me</i>	AQ	US-4,963,385		10-18-1990	ANTRIM et al	
<i>me</i>	AR	US-5,169,787 A		12-8-1992	MATSUURA et al	
	AS	US-5,587,424 A		10-22-1996	HASTINGS	
		US-				
		US-				
		US-				
		US-				

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup>	Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				
<i>me</i>	AT	EP	0 297 887 A1	01-04-1989	QUADRANT BIORESOURCES LIMITED		
	AU	EP	0 556 838 A1	08-25-1993	TAKEDA CHEMICAL INDUSTRIES, LTD.		
	AV	EP	0 628 630 A2	12-14-1994	KABUSHIKI KAISHA HAYASHIBARA SEIBUTSU KAGAKU KENKYUJO		
	AW	EP	0 636 693 A2	02-01-1995	KABUSHIKI KAISHA HAYASHIBARA SEIBUTSU KAGAKU KENKYUJO		
	AX	EP	0690 130 A1	06-27-1994	KABUSHIKI KAISHA HAYASHIBARA SEIBUTSU KAGAKU KENKYUJO		
	AY	EP	0 691 344 A1	01-10-1998	KABUSHIKI KAISHA HAYASHIBARA SEIBUTSU KAGAKU KENKYUJO		
	AZ	EP	0 739 986 A1	10-30-1996	KABUSHIKI KAISHA HAYASHIBARA SEIBUTSU KAGAKU KENKYUJO		
	BA	EP	0 784 095 A2	07-16-1997	MOGEN INTERNATIONAL N.V.		
	BB	EP	0 816 509 A2	01-07-1998	IEBT-INSTITUTO DE BIOLOGIA EXPERIMENTAL E TECNOLOGICA		
	BC	EP	0 933 428 A2	08-04-1999	UNIVERSIDAD NACIONAL AUTONOMA DE MEXICO		
	BD	JP	07-79739 A	03-28-1995	SANEI GEN F F I INC		Abs
	BE	JP	09-163943 A	06-24-1997	AJINOMOTO CO INC		Abs
	BF	JP	09-275994 A	10-28-1997	SHIZUOKA PREFECTURE		Abs
	BG	WO	93/00807 A1	01-21-1993	CRYOLIFE INC		
	BH	WO	95/01448 A1	01-12-1995	MOGEN INTERNATIONAL N.V.		
<i>me</i>	BI	WO	95/06126 A1	03-02-1995	HOEKEMA et al		

Examiner  
Signature

L. E. Crane

Date  
Considered


03/07/2006

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kind Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				Application Number	10/670,525
				Filing Date	9-26-2003
				First Named Inventor	Hajime AGA et al
				Group Art Unit	<del>2054</del> 1623
				Examiner Name	
				Attorney Docket Number	AGA-6B
Sheet	2	of	3		

[illegible]

Examiner Signature	L. E. Crane 	Date Considered	03/07/2006
--------------------	---	-----------------	------------

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 3

of 3

**Complete if Known**

Application Number	10/670,525
Filing Date	9-26-2003
First Named Inventor	Hajime AGA et al
Group Art Unit	<del>2883</del> 1623
Examiner Name	
Attorney Docket Number	AGA=6B

**OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS**

Examiner Initials <sup>2</sup>	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
<i>Me</i>	CB	ARGALL, et al., "The Use of Trehalose-Stabilized Lyophilized Methanol Dehydrogenase from <i>Hyphomicrobium</i> X for the Detection of Methanol", <i>Biochemistry and Molecular Biology International</i> , July 1993, Vol. 30, No. 3, 491-497.	
	CC	CARPENTER, et al., "Modes of Stabilization of a Protein by Organic Solutes During Desiccation", <i>Cryobiology</i> , 1998, Vol. 25, 459-470.	
	CD	CARPENTER, et al., "Separation of Freezing- and Drying-Induced Denaturation of Lyophilized Proteins Using Stress-Specific Stabilization", <i>Archives of Biochemistry and Biophysics</i> , June 1993, Vol. 303, No. 2, 456-464.	
	CE	CARPENTER, et al., "Stabilization of Phosphofructokinase during Air-Drying with Sugars and Sugar/Transition Metal Mixtures", <i>Cryobiology</i> , 1987, Vol. 24, 455-464.	
	CF	CARPENTER, et al., "Stabilization of Phosphofructokinase with Sugars During Freeze-Drying: Characterization of Enhanced Protection in the Presence of Divalent Cations", <i>Biochimica et Biophysica Acta</i> , 1987, Vol. 923, 109-115.	
	CG	GODDUN, et al., "Inhibition of Trehalase Activity Enhances Trehalose Accumulation in Transgenic Plants", <i>Plant Physiology</i> , 1997, Vol. 113, 181-190.	
	CH	HAJIME, et al., "Stabilization by Trehalose of Superoxide Dismutase-like Activity of Various Vegetables", <i>Nippon Shokuhin Kagaku Kogaku Kaishi</i> , 1998, Vol. 45, 210-215. <b>Biosis Abstr: PREV199800255288, only abstract supplied.</b>	
	CI	LIPPERT, et al., "Enzyme Stabilization by Ectoine-Type Compatible Solutes: Protection Against Heating, Freezing and Drying", <i>Appl. Microbiol. Biotechnol.</i> , 1992, Vol. 37, 61-65.	
	CJ	RAMOS, et al., "Stabilization of Enzymes against Thermal Stress and Freeze-Drying by Mannosylglycerate", <i>Applied and Environmental Microbiology</i> , October 1997, Vol. 63, No. 10, 4020-4025.	
	CK	ROSER, et al., "A Sweeter Way to Fresher Food", <i>New Scientist</i> , IPC Magazines, 15 May 1993, Vol. 138, 25-28.	
	CL	ROSER, Bruce, "Trehalose Drying: A Novel Replacement for Freeze-Drying", <i>Biopharm.</i> , 1 September 1991, vol. 4, no. 8, 47-53.	
	CM	ROSER, Bruce, "Trehalose, a New Approach to Premium Dried Foods", <i>Trends in Food Science &amp; Technology</i> , July 1991, 168-169.	
	CN	SALEK, et al., "Trehalose - Stabilisation of Osmophilicity and Viability of Baker's and Distiller's Yeast: Applications to Storage and Drying", <i>Chem. Mikrobiol. Technol. Lebensm.</i> , 1995, Vol. 17, No. 1/2, 14-21.	
	CO	SUN, et al., "Cytoplasmic Vitrification and Survival of Anhydrobiotic Organisms", <i>Comp. Biochem. Physiol.</i> , 1997, Vol. 117A, No. 3, 327-333.	
<i>Me</i>	CP	URITANI, et al., "Protection Effect of Disaccharides on Restriction Endonucleases During Drying under Vacuum", <i>J Biochem</i> , 1995, vol. 117, 774-779.	

Examiner  
Signature

L. E. Crane

Date  
Considered

03/07/2006

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449A/PTO

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1

of 2

## Complete if Known

Application Number	10/670,525
Filing Date	September 26, 2003
First Named Inventor	Hajime AGA
Group Art Unit	1623
Examiner Name	
Attorney Docket Number	AGA6B

## U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
He	CB	US-4,806,343 A	02-21-1989	Carpenter et al.	
	CD	US-4,839,164 A	06-13-1989	SMITH WALTER P	
	CE	US-5,059,518 A	10-22-1991	KORTRIGHT KENNETH H et al	
	CF	US-5,149,653 A	09-22-1992	ROSER BRUCE J	
	CG	US-5,512,547 A	04-30-1996	Johnson et al.	
	CH	US-5,556,771 A	09-17-1996	Shen et al.	
He	CI	US-5,935,838 A	08-1999	Nishimoto et al.	
	US-				
	US-				
	US-				
	US-				
	US-				
	US-				
	US-				
	US-				
	US-				

## FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Number Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
He	CJ	DE 195 03 685 A	08-01-1996	INVITEK GMBH		
	CK	EP 0 693 558	01-24-1996	HAYASHIBARA BIOCHEM LAB		
	CL	EP 0 726 310 A	08-14-1996	GEN PROBE INC		
	CM	JP 60 149972 A	08-07-1985	YATORON: KK		
	CN	JP 6 040845 A	02-15-1994	SHISEIDO CO LTD		
	CO	JP 7 184378 A	08-01-1995	FUJI SEITO KK		
He	CP	WO 97/42327 A	11-13-1997	ZENTELLA GOMEZ et al.		

Examiner Signature

L. E. Crane

Date

Considered


03/07/2006

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kind Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTN		Complete If Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	10/670,525
		Filing Date	September 28, 2003
		First Named Inventor	Hajime AGA
		Group Art Unit	1623
		Examiner Name	
Sheet 1 of 2	Attorney Docket Number	AGA6B	

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
Jee	CQ	AGUILERA J M et al "Preservation of biological materials under desiccation" Critical Reviews in Food Science and Nutrition" Vol. 37, No. 3 (1997) pp: 287-309.	
	CR	BHANDAL I S et al "Trehalose As Cryoprotectant for the Freeze Preservation of Carrot Daucus-Carota and Tobacco Cells" Plant Physiology, Vol. 78, No. 2 (1985) pp: 430-432.	
	CS	COLACO C et al "Extraordinary Stability of Enzymes dried in Trehalose: Simplified Molecular Biology" Bio/Technology, Nature Publishing Co. Vol. 10, No. 9. (September 1992) pp: 1007-1011	
	CT	CROWE J H et al "Interactions of sugars with membranes" Biochimica et Biophysica Acta Vol. 947, No. 2 (June 1988) pp: 367-384.	
	CU	CROWE L M et al "Is trehalose special for preserving dry biomaterials?" Biophysical Journal, Vol. 71, No. 4, (October 1996) pp: 2087-2093.	
	CV	HOLMSTROM K O et al "Drought Tolerance in Tobacco" Nature, Macmillan Journals LTD, Vol. 379 (February 1996) pp: 683-684.	
	CW	MOURADIAN R et al "Degradation of Functional Integrity During Long-Term Storage of a Freeze-dried Biological Membrane" Cryobiology, Vol. 22, No. 2 (1985) pp: 119-127.	
	CX	NEWMAN Y M et al "The Role of Trehalose and other Carbohydrates in Biopreservation" Biotechnology and Genetic Engineering Reviews, Intercept LTD. Vol. 11 (December 1993) pp: 263-294	
	CY	PANEK A D "Trehalose metabolism: New horizons in technological applications" Brazilian Journal of Medical and Biological Research" Vol. 28, No. 2 (1995) pp: 169-181	
	CZ	RUDOLPH A S et al "Dry Storage of Liposome-Encapsulated Hemoglobin a Blood Substitute" Cryobiology, Vol. 27, No. 6 (1990) pp: 585-590	
DA	RUDOLPH A S "The Freeze-Dried Preservation of Liposome Encapsulated Hemoglobin A Potential Blood Substitute Cryobiology" Vol. 25, No. 4 (1988) pp 277-284.		
DB	SOLA-PENNA M et al "Protective role of trehalose in thermal denaturation of yeast pyrophosphatase" Zeitschrift fur Naturforschung, Journal of Biosciences (May 1994) Vol. 49, No. 5-6 pp: 327-330.		

Examiner Signature	L. E. Crane 	Date Considered	03/07/2006
--------------------	---	-----------------	------------

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.